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ABSTRACT

This collection of six articles describes essential features of systemic program evaluation. Articles are: (1) "Programs Need to Go Beyond 'Comprehensive'" (R. Jerry Adams and Kim Yap); (2) "Systematic Planning of Goals for Desired Outcomes" (Steve Nelson); (3) "A Framework for Conducting Systematic Evaluation" (Dean Arrasmith); (4) "Developing Systematic Improvement Strategies" (Joan Shaughnessy); (5) "How to Design a Systemic Evaluation Process" (Roy Kruger and Patrick Weasel Head); and (6) "Using Evaluation Findings in Improvement Efforts" (Changhua Wang). Developed on the basis of a review of the relevant literature, discussion among evaluators, and the personal experience with program evaluation, the papers in this collection are intended to stimulate and facilitate future research and development work on systemic evaluation and the use of indicators of progress in complex school and community improvement situations. The document is intended to share emerging perspectives with interested policy makers and evaluators in order to begin a dialogue on developing a systemic approach to evaluating inventions in education and other social service areas. Systemic evaluation is considered to be particularly applicable to the evaluation of AOD programs where multiple sources of influence (e.g., peers, family, school, and community) impinge on the success of prevention and intervention efforts. (TS)

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SYSTEMIC

EVALUATION

A New Approach to Assessing the Effects of Tobacco, Alcohol, and Other Drug (TAOD) Programs

November 1995

Western Regional Center for Drug-Free Schools and Communities

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DIRECTOR'S NOTE

After the Western Regional Center published its six-part series of articles on systemic evaluation of tobacco, alcohol, and other drug (TAOD) programs in our quarterly newsletter, the *Western Center News*, we began receiving numerous requests for reprints. This publication was produced in response to those requests. The reprints will become part of the center's final product, *A Comprehensive Approach to Building Prevention Programs: A Guide For Trainers*. We are confident that the systemic evaluation series will be so useful and so packed with practical advice on how to approach TAOD program evaluation that it will become a permanent part of every preventionist's reference collection. Taken as a whole, the articles in this collection represent cutting-edge information on systemic evaluation approaches that will become a model for use in the program consolidation efforts now in progress across the region and throughout the country.

Many thanks to authors Dean Arrasmith, Kim Yap, Jerry Adams, Steve Nelson, Joan Shaughnessy, Roy Kruger, Patrick Weasel Head, and Changhua Wang for their fine work. Many thanks to Lee Caudell for her excellent editing and to Denise Crabtree for her contribution to formatting and proofreading the articles.

Carlos Sundermann, Director
Western Regional Center for Drug-Free Schools and Communities

INTRODUCTION

Evaluations that provide a static, discrete, isolated assessment of the effectiveness of a program or project are generally neither meaningful nor useful to policymakers or practitioners. The shortcomings of current practices can be remedied by switching to a systemic approach that looks at projects and programs within their larger context. Such an approach views programs and the environment in which they exist as fluid, dynamic, and interactive systems affected by multiple influences at many levels. Changes in the pattern of interrelationships among such influences as peers, family, school, and community in turn affect project results.

This series of papers describes what we consider to be essential features of systemic evaluation. Developed on the basis of a review of the relevant literature, discussion among evaluators at the Northwest Regional Educational Laboratory, and our experience with program evaluation, the papers are intended to stimulate and facilitate future research and development work on systemic evaluation and the use of indicators of progress in complex school and community improvement situations. We wish to share our emerging perspectives with interested policymakers and evaluators to begin a dialogue on developing a systemic approach to evaluating interventions in education and other social service areas.

Systemic evaluation, in our view, is particularly applicable to the evaluation of AOD programs where multiple sources of influence (e.g., peers, family, school, and community) impinge on the success of prevention and intervention efforts.

These articles were originally published as a series beginning in September 1994 and running through September 1995 in the *Western Center News*, the quarterly newsletter of the Western Regional Center for Drug-Free Schools and Communities.

Kim Yap
Unit Manager
Evaluation and Assessment Program

Article 1, September 1995

Programs Need to Go Beyond 'Comprehensive'

By R. JERRY ADAMS and KIM YAP
Northwest Regional Educational Laboratory

When you say your prevention program is "comprehensive," what do you mean? Do you mean the program contains multiple components? Do you mean the program involves parents, community members, and peer groups? Perhaps more importantly, do you fully understand how your comprehensive program works—how its components relate to each other and how they interact with the larger system of which the program is a part?

Without knowing how your program works and how it interacts with the larger environment, it is difficult, if not impossible, to know how to strengthen it and how to make it interact more positively with the larger environment or system to produce the desired outcomes.

Many preventionists argue that alcohol and other drug (AOD) programs are most effective if they are comprehensive. That may mean involving school, community, and/or family. It may mean including a number of strategies and activities. Such broad-based approaches can go a long way toward effective prevention. We suggest, however, that there is yet another level or degree of programming that embraces all players holding a stake in AOD-free youth and all the environments they represent. Such an all-encompassing approach can be termed "systemic."

We want to turn this discussion to the question, What does it take to make the difference? Specifically, what are all of the pieces that should be in place and how should the pieces fit together? How should the school work with families? How should the community work with schools? What kinds of activities should be in place for good peer support?

A systemic approach includes many strategies and is, by definition, comprehensive. A comprehensive approach, however, may not necessarily be systemic. For example, a school may have AOD instruction embedded in several subject areas, may have a D.A.R.E. program, and may sponsor some AOD-free recreational or sporting events. The school's administrators may say that their approach is comprehensive. Another school may also involve parents in the planning of some AOD-free recreational activities and consider itself even more comprehensive. A third school may also involve community leaders in a mentoring program and be more comprehensive still.

A fully comprehensive program would include all of the essential strategies, activities, and environments—school, community, family, students, and peers. However, including all of the strategies, activities, and environments is not enough to make a program systemic. In order to be systemic, the relationships among the components also need to be developed. In short, a "systemic approach" covers all of the essential strategies and activities in all of the essential environments—and the relationships among them. It ensures that the various strategies work in a coherent way, pushing in the same direction to achieve the desired outcomes.

A systemic approach suggests the need for a chart so the components and relationships can be visualized (see sample chart on page 3). Such a chart allows community, school, family, and student representatives to discuss and clarify their beliefs about what the essential strategies are. In addition, the chart allows them to check their strategies against findings from research on what has worked.

Next, the participants in program planning can write in the activities that are currently in place. Do those activities seem to be sufficient to fully implement each of the essential strategies? If not, what activities, in which environments, must be added?

Examples of strategies include promoting positive expectations, ensuring care and support, and generating meaningful involvement. These examples come from the literature on promoting resiliency in children. For each strategy, a series of activities or programs may need to be in place, depending on the community. Some strategies may need several programs, and some may need few. Some strategies may need to be implemented in all environments and some may not. (The chart below provides some examples of activities that may be used to implement a strategy.)

Once the components of the system have been portrayed, then planning and evaluation activities can be developed to monitor progress. For instance, each cell of activity may be evaluated in terms of its impact. The chart also promotes discussion of the relationships across strategies, activities, environments, and stakeholders. The chart becomes a tool for structuring a systemic planning and evaluation process that includes the following steps:

1. Clarify the problem or needs
2. Access and synthesize relevant knowledge
3. Develop and apply strategies to make systemic improvement
4. Design a systemic evaluation process to monitor progress and assess impact
5. Implement the systemic evaluation process (including data collection, analysis, and reporting)
6. Use evaluation information to strengthen strategies for systemic improvement

A systemic improvement has several essential characteristics. Specifically, an improvement is systemic when it (a) is accepted within the components of the existing system, (b) spreads through the entire system, (c) has power to make visible, desired differences—both in terms of process and outcomes, (d) strengthens the linkages between and among components of the existing system, and (e) becomes part of and improves the culture of the system.

A systemic approach to your comprehensive program is fluid and dynamic, with many levels of interactive and causal influences. Its impact can best be understood and explained in terms of changes in the pattern of interrelationships among the relevant variables at multiple levels (individual students, peers, family, school, and community).

The chart may be the first step in a six-step process of systemic planning and evaluation. Each step will be discussed in a separate installment of this series.

Systemic View	STRATEGIES						
	Positive Expecta-tions	Caring and Support	Meaningful Involve-ment				
Places Where Result Occurs	↑	↑	↑	ACTIVITIES	↑	↑	↑
Community	Chamber scholarship program	Chamber school mentoring program	Student river project				
School			Student participation in site mgmt. teams				
Family			Home-business student project				
Student Peer		Peer support program					
Individual							

Article 2, December 1994

Systemic Planning of Goals for Desired Outcomes

By STEVE NELSON
Northwest Regional Educational Laboratory

As a beginning point for systemic evaluation, we can take a more systemic perspective in planning the goals of our improvement efforts. While educational planning usually begins with considerations of needs assessment and problem clarification, a systemic view will broaden this phase to look at the "what" and "why" questions about the desirable scope of the goals we wish to achieve. Goals reflect not just the minimization of identified needs, but also the attainment of desired outcomes. In other words, our desired outcomes must become more inclusive and divergent, rather than behavioristic and convergent.

We must recognize from the outset that individuals and organizations are complex, so our understanding of the nature of our goals and solutions must be carefully integrated. As Healthy People 2000 points out: "The most effective community-based health promotion programs recognize the interrelationships between behavior and environment, and include multiple interventions directed at multiple levels (e.g., individuals, small groups/families, organizations, community). This is true regardless of the target population or the issues being addressed."

So, while it may not sound much like evaluation, we need to spend time analyzing the systemic nature of our goals. Do our goals adequately reflect system outcomes?

The systemic planning of program goals has at least two phases: (1) defining the nature and etiology of the goal to be addressed and (2) establishing a rationale that defines the contextual relationship of the goal to our system. Put more simply, what goals do we want to achieve, how did these goals come to be, and why are these goals associated with the functions of our organization?

Defining the Nature and Etiology of the Goal

Back when experimental psychologists ruled the earth and behavioral objectives could be precisely defined and measured, educators were encouraged to plan and evaluate in a needs-driven environment. Specific, individual needs were assessed and remediated. A highly sophisticated, deficit-oriented system was developed for eliminating undesirable behaviors. Unfortunately, this orientation does not work particularly well in a health promotion setting, where an array of desirable knowledge, skills, attitudes, and behaviors is expected to be achieved and applied. The traditional needs-driven approaches do not lend themselves to universally inclusive goals for well-being because of their focus on deficit reduction. This is not to say that some elements of our goals should not have a risk-reduction focus. Rather, desirable outcomes should also be defined in the goal. For example, "Health is more than the absence of disease."

So, practically speaking, how do we define the nature and origins of our program goal? There are four probable origins from which program goals would most likely derive:

1. Mandates from regulatory agencies
2. Health needs of students documented in the local area
3. Values expressed by the local community

4. Standards advocated by professional organizations

Our program's goals most likely originated from one or more of these sources: What outcomes are required by regulation? What vital statistics or incidence and prevalence data document student needs? What health-related values are expressed by community stakeholders? What student performance standards are embraced by professional associations? Grounding our goals within the context of these sources of information will help us to think about the systemic relationship of our program to that of other systems.

But how can we tell if the goal is systemic in nature? Besides being integrated (grounded in the various systems noted above) the goal needs to be inclusive, encompassing all children and incorporating the full range of outcomes from promotion to prevention to intervention to reintegration. This orientation requires us to think about the scope and severity of the need to be addressed. How pervasive is the need? What is the consequence of not achieving the desired outcomes? What would the desired state ultimately look like, not just as the absence of the need, but the absolute presence of the desired trait or condition? This step is a process of reconciliation in which the various facets of the goal are considered and brought into alignment.

Establishing a Contextual Rationale

This step helps to clarify the connections between the goal to be achieved and the functions of our organization. What legitimate roles might our organization play in addressing the desired goals? What reasonable and desirable steps could be undertaken by the organization to achieve the intended outcomes? Think about what contextual conditions can be affected by the program to encourage the intended outcomes. Having a rationale as to why a program is addressing this goal will help to develop more holistic, multiple paths and strategies for improvement.

The goals of our program are more likely to be systemic in nature if they are:

Sustainable—Would the organization continue to hold this goal in the absence of any special funding or programs?

Potent—Is this goal understood, valued, and embraced by stakeholders in our community?

Infusive—Does this goal build upon the existing mission, resources, and infrastructure of our organization?

Pervasive—Is the goal multifaceted and inclusive in its desired outcomes?

Coherent—Does the goal create and encourage congruence among the levels and dimensions of our system?

In this first phase of systemic evaluation, we are determining the extent to which the goals of the program are systemic in nature. In the next phase, we will determine the degree to which the program's planned intervention strategies also embody systemic principles. Thus, in the early stages of systemic evaluation, the purpose is to determine if the improvement effort itself is systemic.

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Article 3, June 1995

A Framework for Conducting Systemic Evaluation

By DEAN ARRASMITH
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A useful tool for helping develop program logic is the "logic model." This tool is designed to help stakeholders in a system such as a community, a school, or an organization to think together about how their project can effect change in the health of the system. In a community drug improvement project, the logic model can be useful in eliciting a shared understanding of the current condition of the community and in planning activities that are likely to result in desired outcomes and impact on the community's health. Throughout the model, rational links based on shared craft knowledge and empirical research are established, helping to guide the development and implementation of project activities.

The development of the model provides an opportunity for establishing a shared understanding of the project logic. Thus, logic here means the rational, empirical, and intuitive relationships established among system context, inputs, processes, and outputs that lend validity to the possible effectiveness of the interventions.

The basic logic model consists of four linked components of the project: (1) the context or condition of the system, (2) the interventions or activities to be conducted, (3) the expected outcomes related to the interventions, and (4) the impact of intervention on the system. An example logic model is presented in the figure on page 10.

The first component of the logic model is the depiction of the current condition of system health. For example, in a community improvement project, the health of the system may be indicated by information about support services, community participation, crime statistics, student academic success, juvenile offenses, community health programs and health problems, economic development data, housing availability, and use of social assistance. The specific indicators of community health should be identified by key stakeholders who each have a perspective on the health of the community and who will, through the activity of developing community health indicators, develop a shared understanding community health.

A list of possible indicators for a profile of the community's health is shown in the first column of the figure below. This list was developed by stakeholders in a community drug- and alcohol-prevention project. These indicators provide a shared understanding of the strengths and needs of the community related to drug and alcohol use, especially among youth. The community profile allows stakeholders to share their understanding of the community's health with others in the community and to facilitate the development of project activities that build on identified strengths and address identified needs of the community.

The second component of the logic model is the specification of the activities to be implemented by the project. These activities need to build on the understanding of the strengths and needs of the system and target the desired changes in the health of the system. Because of the requirements that activities relate to community strengths and needs and be directed toward desired changes, the process of identifying specific activities often is an iterative process (a repeating, refinement process) rather than a linear process, arising from consideration of the health of the system and consideration of the desired changes in the health of the system. This iterative process will become clearer as we discuss the identification of outcomes, impact, and project logic.

Our experience in working with several community and school projects is that stakeholders often have many activities they want to implement, and the development process often is one of focusing on a set of activities that are most likely to be efficient and effective in promoting the desired changes in the health of the system. This is where program logic can be most useful in

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developing shared criteria for selecting activities among the many that are likely to be proposed for a project. In fact, we have worked with some communities that now use their established logic models to screen requests for new activities. If the activity fits into the program logic and there are sufficient resources for the activity, the project embraces the activity. However, if the activity does not fit the program logic, then the activity is rejected or, if necessary, the program logic is reviewed and modified. In one example, a project continued to receive requests for multicultural activities. The project logic model did not include multicultural elements, and these activities were rejected. After receiving additional requests for participation in multicultural activities, the stakeholders reviewed their program logic and found clear associations with multicultural issues and their desired changes in community health. With modification, the requests for participation were incorporated into the activities of the project.

The specification of activities within the framework of program logic can provide an effective process for managing project resources and maintaining the focus on desired system changes by systematically integrating new ideas into the rationale for the project.

Outcomes—the short-term, immediate results of activities—are the third component of the logic model. Outcomes are specific, relatively immediate changes in the knowledge, state, and/or processes of system members and organizations. For example, consider the increased knowledge parents are likely to receive by participating in parenting classes as part of a family program for first-time youth offenders. Or consider the community change in providing increased affordable housing that allows shorter waiting time for families to receive housing assistance. In each of these cases, there are immediate changes—the outcomes—that are attributable to specific community activities.

As with the specification of project activities, the specification of outcomes is an iterative process. Some outcomes will be identified from consideration of project activities. Other outcomes will arise from consideration of the health of the system and will include specific system strengths and address system needs. Still others will arise from consideration of desired changes in the fundamental nature and operations of the system—the system impact.

Closely identified with outcomes is the desired systemic impact arising from the project. Impact is the long-term, substantial change in the health of the system. Impact is identified from consideration of the vision of system health that stakeholders share. Very often, impact is identified from a clear understanding of the present condition of the system and represents the vision of a healthy system. As we use it here, impact refers to the large, fundamental changes that will have long-lasting and far-reaching effects on the health of the system. These effects are the systemic changes that are described in the second article in this series (see the *Western Center News*, December 1994).

As an example, one community prevention network seeks to have an overall impact of reducing children's and youths' illicit use of alcohol and drugs and reducing adult abuse of alcohol and drugs. Outcomes that will lead to these fundamental changes in the community include encouraging families to create and maintain positive guidelines for their children; fostering community attitudes that support no use of drugs and alcohol among children and youth and responsible use among adults; encouraging families that are socially isolated to be more connected to the community; and encouraging youth to develop healthy bonds to their family and community. As a set of expectations, outcomes and impact define the direction for the project, and activities that are rationally linked to the desired change in community health are matched to this direction.

Program logic is the links among the health of the system, project activities, outcomes, and impact. It is built from shared craft knowledge and empirical evidence about effective systemic change efforts. Several lines of research provide a model of program logic that has proved helpful in community project planning. Community-focused program logic can be organized in four components that describe two dimensions of internal and external qualities of healthy individuals and families. Aligned along the dimension of external qualities are community protective factors, described by Benard (1991), and stressful events, discussed by Holmes and Rahe (1967). These two components describe the community support systems, organizations, and services that promote individual and family wellness, along with the life events that create stress for individuals, families, and communities. Very often this dimension, external from individuals and families, is where communities can develop immediate and responsive activities to improve the health of

individuals, families, and the community. Developing responsive community support systems—developing organizations and services that promote individual and family wellness—can be decisive ways communities can help individuals and families deal with stressful life events.

The internal dimension of health involves the risks individuals and families face and the resiliency they possess to withstand stress and change. Risk, described by Hawkins and Catalano (1992), refers to the traits and conditions that may limit the wellness of individuals and families. These traits and conditions reflect behaviors that limit, for example, social bonding, encourage dysfunctional behavior, and lead into strong alienation and rebelliousness. Resiliency, described by Benard (1991) and Wolin and Wolin (1993), refers to the traits and conditions that mitigate risk and allow individuals to cope with stress. In general, resiliency includes social competence, problem-solving skills, and a sense of purpose and future.

Communities can develop healthy individuals and families by encouraging the development of resiliency and addressing risk factors. Frequently, these dimensions are addressed in communities by focusing on increasing social bonding through community participation, developing consistent and high expectations for individuals and families, and encouraging individual and family growth and resiliency.

The logic model provides a theoretical framework for developing and conducting the project evaluation. From the model, the activities and outcomes can be evaluated following traditional evaluation strategies. Formative evaluation related to the implementation of activities, the barriers and solutions encountered in conducting the activities, and the direct outcomes of the activities can be documented. For example, a parenting course that is required for parents of first-time youth offenders can be monitored to determine the number of parents participating in each parenting class, the curriculum included in the classes, the parents' attitudes toward the curriculum, the teaching methods used, and the knowledge gained by parents about their role in helping youth develop strong bonds with family and community. With a clear understanding of the activities and the rationally linked outcomes, the evaluation can be designed to assess the level of implementation and realization of desired outcomes.

Project assessment requires the longitudinal evaluation of the change in system health. This focus on system condition and impact in the logic model, enclosing project activities and outcomes, can provide a systemic framework for understanding the substantial, long-term, and fundamental change in system health. Periodic profiling of the key indicators of system health can provide a comprehensive assessment of improvements in system health. With the rational linkage between this systemic framework and the activities and outcomes of the project, program effectiveness can be assessed.

In future articles in this series, specific evaluation techniques for monitoring activities and outcomes, as well as assessing systemic impact will be discussed. For now we have offered a tool for planning systemic projects that can help lead toward improvements in the health of the system.

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COMMUNITY DRUG PREVENTION NETWORK LOGIC MODEL

Local Conditions

Child Abuse
Births to Teens
Alcohol Outlets
DUIs/MIPs
Drug-affected Births
Media Advertisements
Public Housing Needs
Homelessness
Early-leavers from School
Suicide Attempts
Discipline Referrals
Juvenile Crime Rate
Levels of AOD Use by Youth
Parent/Youth Attitudes
Pubiic Policies
Gang Affiliation
Bias Crimes

Strategies

A. Identify and promote family management programs that effectively address AOD risk factors. (1,2,3)

B. Strengthen and support clear community laws and norms regarding AOD use. (2,4)

C. Improve consistency of enforcement of community laws and school policies regarding AOD use. (2)

D. Educate children, youth, and parents about legal and social consequences of AOD use by children and youth. (1,2)

E. Encourage reduced alcohol use at community events. (2,4)

F. Promote increased AOD-free community events for children and youth. (2,4)

G. Utilize media to promote messages about children and youth and reduce messages encouraging AOD use. (2,4)

H. Identify and network with community agencies, families, and resources to address families' social isolation, extreme poverty, and poor living conditions. (3)

I. Work with schools and community to provide activities that promote bonding of youth and families. (2,4)

J. Develop and maintain a partnership of key community leaders to address AOD risk factors. (1,2,3,4)

K. Educate youth and adults regarding cultural diversity and promote multicultural inclusion. (2,3,4)

Impact

a. Reduce children's and youth's use of AOD.

b. Reduce AOD abuse among adults.

Outcomes

1. Families will create and maintain positive guidelines for their children. (a)

2. Community attitudes about AOD use and abuse will improve. (a,b)

3. Families who experience social isolation will be more connected to the community. (a,b)

4. Opportunities for youth to create healthy bonds with school, family, congregation, and community will increase. (a,b)

Notes: 1. AOD - Alcohol and Other Drugs 2. Parentheses include indexes of Local Conditions to Strategies to Outcomes to Impact.

Article 4, June 1995

Developing Systemic Improvement Strategies

By JOAN SHAUGHNESSY
Northwest Regional Educational Laboratory

The systemic improvement process is a paradigm shift to a different mode of problem solving. (Paradigm shifts are major changes in a prevailing set of assumptions and beliefs.) The motivation for making this shift is that a systemic viewpoint improves the program's ability to address major issues in a coordinated, comprehensive, and meaningful way.

Most organizational structures in our Western civilization are based upon a mechanistic viewpoint which suggests that each problem we address can be broken down into parts and subparts (Wheatley, 1992). Each environment—schools, health organizations, crime prevention agencies, and so on—works on its own part of the process in isolation from the others. Each operation in this complex process is done by a separate team of people using different skills and tools. The result is compartmentalization and specialization. Many different agencies, committees, or task forces are created, each one managing one portion of the work. While their approaches may be multifaceted, they usually lack a systemic focus. Subparts of a system can chug along on parallel tracks unaware of others doing similar work, or at times working counter to each other.

In contrast, a systemic viewpoint maximizes agreement about what is most important, facilitates coordination, and minimizes the chance that forces within the system are acting in contradiction to one another.

To prevent this from being too abstract, let's use a specific example. Suppose that alcohol and other drug (AOD) abuse is identified as major problem in your community. You know that this issue is being addressed by many parts of your system, each specializing in a specific set of solutions. Because these many groups hold different and diverse perspectives, each may spawn a different way to address that problem. For example, one social service group may be trying to forestall the use of illegal substances by providing quality family time, while a school-based group may be trying to give teenagers more self-esteem by providing a "teens only" club. Both of these goals are admirable; both are inherently beneficial. When these two subparts of the system each schedule a major event on the first Saturday in May, however, they will be acting at cross-purposes. Meanwhile, the more serious cause of the AOD abuse may be issues that are not dealt with by either group and no one in the system is attending to these underlying problems. This is a simplistic example, but it gives you a sense of what happens in a nonsystemic model. If there is no systemic perspective, there is no connection across the parts and there is no general agreement about what needs to be done to address problems.

In designing systemic improvement, three important issues need to be addressed: what to do before you develop strategies for your system, what to consider during the selection of systemic strategies, and how to maximize success throughout the design and implementation phase.

First Steps

What are the essential elements needed *before* planning the intervention? There are many and, to be honest, they demand a great deal of commitment and energy at this first stage of the process. Systemic improvement is not a quick-and-easy fix.

A first step in strategizing for systemic change is to define your system and identify who and what are included in the system (the stakeholders). You will need to ensure that stakeholders see

the value of collaborating with others in the total system. Gaining participation among people in different parts of the system is a vital step and it is best done by a cooperative rather than an individual effort.

Secondly, creating a leadership team with members from various parts of the system will help focus the work beyond the narrow perspective of any one agency. Once formed, your leadership team needs to understand the existing interrelationships between the components in your system.

Your third step will be to select one of several ways to foster this systemic viewpoint. Drawing a visual representation of your system or a diagram of the forces operating is one activity that helps stakeholders break out of their compartmentalized thinking. You will probably start with a simplistic sketch of the system and expand upon it as you learn more about the system. A matrix or chart listing all the subcomponents and the major commitments in the system may also be helpful.

Another way is to work on consensus about the desired systemwide outcomes. The logic model discussed in the article on Page 4 is an approach that prompts discussion of the factors operating in a system. Another help in this phase of the process is to use symbolism. For example, to broaden systemic thinking, we have shown aerial photos of river systems with all their many tributaries. We ask groups planning systemic change to contrast the river as a naturalistic system with the one they work within. Leadership teams begin to ask: "What binds a natural system like a river together?" They discover that the tributaries of the river connect for a singular, simple but powerful purpose—to follow the call of gravity. A river system works its way around many different types of obstacles to reach its goals. Leadership teams are encouraged to ask what kind of force would unite their system to achieve a common goal. The insights from such a discussion often can be profound and provocative.

A fourth step to prepare for systemic thinking is to gather data about problems and issues facing the system. Systemic thinkers need to be aware of underlying causes, societal pressures, research-proven practices, and craft knowledge. To get to that point, your leadership team will need to systematically collect a variety of information. Articles about systemic improvement, books that guide data collection (such as those on Total Quality Management in schools), materials about school profiling and research syntheses of effective strategies are helpful documents at this stage of the process. Talking and listening to a variety of stakeholders throughout the system also provides valuable information. Consultants who can help you collect valid and reliable data or can recommend appropriate articles or information about research proven approaches are a good investment at this stage of the process.

To continue with our example, just think of all the many unanswered questions you would have after you identified systemwide AOD problems. To formulate appropriate strategies you need to know which segment of the population is most susceptible to drinking problems. When do these problems occur? What programs are already in place in the community? Who do they serve and what kinds of successes do they have? What strategies really work and have data to prove it? Will these strategies work in your community? Each of these questions can launch a series of individual research projects, but when you are thinking systemically, you'll need to tie your investigations to one another. Your aim is to study the whole river, not just one of its minor tributaries.

Another precondition before designing a systemic strategy is to maximize the communication and linkages among components of the system. Multiple communication processes will facilitate collaboration. Communication channels should be formal and informal, written and spoken, and should include the sharing of all data and information collected. In addition, communication networks must be two-way processes; the leadership team needs to share what they have learned and to listen to those in the many different parts of a system. In short, your fifth step is to ensure that multiple forms of outreach and input have been developed.

The sixth issue to face is securing widespread agreement about the direction you are heading and to develop goals that are truly systemic. Instead of focusing on narrow definition of issues, you will need to identify broad-based goals and to help stakeholders identify and articulate their

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shared beliefs. (Issues related to selecting systemic goals were reviewed in the second article in this series.)

When you have a bird's-eye view of the problem, along with the facts about your system and agreement on the system's goals, then you are equipped to plan your systemic improvement efforts.

Designing Strategies

Once you have decided what you want to accomplish, you will need to select implementation strategies that in fact work toward those goals, rather than those that are merely appealing or interesting to implement.

Ideally, a holistic view needs to permeate all the work in the system. Shared beliefs that expand beyond the turf of one group need to be revisited periodically. Keeping those in the forefront will help focus the group to make choices along the way. All who will be part of the interventions need the opportunity to connect their work to other work underway in the system.

As your leadership team designs action plans, they will need to ask three questions to verify that their strategies retain a systemic focus. First, do all stakeholders have a chance to participate appropriately in the design and implementation of the plan? Secondly, are the action plans integrated? Thirdly, does the plan provide services needed to all who share in the problem? Planners need to be sensitive to the needs and motivations of diverse cultural groups so they can incorporate strategies that are appropriate for all.

Stakeholder Participation

Your leadership team may have a strong sense of the systemic problems, but it cannot carry an effort forward without stakeholder participation. Approaches that bring large groups together for several meetings, such as the Future Search conference described by Weisbrod (1992), help a program to select a systemic goal and design specific action plans to address a common problem. Those who will be providing the services should also participate in these events. Be prepared to bring stakeholders together several times throughout the process to maintain their interest and maximize their input.

When engaging diverse stakeholders, structure time together to ensure that collaborative participation is a positive experience. Build in personal sharing and team-building activities and encourage social interaction. Establish an atmosphere of trust and openness, and be prepared to diffuse confrontation at meetings. Revisiting shared beliefs can help this process.

Ensuring that the efforts are integrated demands formation of partnerships across agencies. Partnerships work best when all participating groups benefit from the collaboration. Often one group, such as the leadership team, serves as the communication link and/or manager of the action plan, but the group continues to form additional groups to oversee portions of the process. It is helpful if each new group revisits the concepts of systemic thinking and their commitment to the systemic goals before and during their work.

To be comprehensive, the effort needs to reach all who are connected to the problem. Intervention strategies should avoid being focused on just a small segment of the population (for example, those who self-select to participate.) For the intervention strategy to be systemic, the service providers need to identify the underlying cause and then reach out to affected populations and expand services broadly throughout the system. In short, the combinations of solutions generated should work with all segments of the population.

Maximizing Success

If you are going to invest this amount of effort, you will want to ensure that the systemic work you are doing is successful. Here are some recommendations that can help maximize success throughout the effort:

- Make sure there are many different and diverse groups participating in the planning and the action steps. It is particularly helpful to include representatives of populations being served by

the program in the planning process. Representatives also need to be accessible to all stakeholders.

- Keep revisiting the mutual goals and shared values that you have developed. These will help you overcome resistance to systemic work. When resistance occurs, acknowledge it and work through it constructively.
- Make sure the rewards throughout the system support collaboration. Those who are being discouraged from doing collaborative work will not continue with the process.
- Continue to introduce outside learning from time to time to spur thought. Encourage continuous reflection and thinking about the process.
- Realize that the strategies you have developed are work "in progress." You will keep learning and developing newer and better ideas as you go along, so encourage flexibility. You will want the plan you develop to be adaptable and at times even opportunistic. When new data or information becomes available or new strategies are generated, add these to your plan.
- The reverse is also true. Strategies for systemic improvement that are not effective need to be abandoned. The ability to make midstream corrections can streamline the effort and make it more cost effective.
- To add or drop parts of your plan, evaluation of the process is essential.

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Article 5, September 1995

How to Design a Systemic Evaluation Process

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The previous articles in this series identified four key elements we will build upon in developing strategies for a systematic approach to systemic evaluation of community improvement programs:

- Systems are dynamic and hierarchical in nature (Article 1)
- The "logic model" provides a systematic tool for systemic monitoring and assessment (Article 3)
- A systemic perspective is an important component of a systematic monitoring and impact evaluation process (Article 4)
- Systemic program goals are comprehensive and complex (Article 2)

Systemic evaluation is a process of assessing the impact of activities that are designed to change complex behavior and norms. It is distinguished from older, more linear evaluation models in that it takes a broader, more comprehensive perspective on programs and their effects. This new systemic perspective acknowledges the extraordinary complexity of human systems. Rather than focusing narrowly on isolated pieces of a system, then, systemic evaluation looks at a set of interrelating variables within a particular context (Yap and Arrasmith, 1993). Acceptable research evaluation practices require that the evaluator know what the program is intended to accomplish; who or what is supposed to benefit from the intended change; who operates the program; and what activities or strategies are employed to create change (King et al, 1987). In collecting data (either through quantitative or qualitative research methods), the evaluation process should be designed to adequately reflect the expectations of diverse stakeholders while clearly presenting the constraints on the program. The basic purpose of the evaluation also must be clear.

Recent school reform initiatives, such as the national Goals 2000 legislation, have spelled out the expectations of policymakers for program accountability. In calling for systemic reform, such initiatives also call for systemic evaluation. As indicated in *The State's Role in Effecting Systemic Change: A Northwest Depiction* (Hagans et al, 1992), systemic evaluation includes multiple targets that are malleable and have wider latitudes than those in nonsystemic evaluation. How can one collect empirical data and not let old standards get in the way of the systemic reform movement, especially in the systemic evaluation process? To answer this question, one should understand the dynamics and hierarchical nature of systems.

Nature of Systems

The systems model has become an increasingly used comprehensive tool for illustrating and understanding complex interrelationships that exist between individuals, organizations, and communities. The systems model provides important insights for designing a systematic evaluation process to monitor the progress and impact of community improvement programs.

Systems are dynamic entities, comprised of subunits called elements. The elements of a particular system interrelate in a unique way, producing distinctive attributes that differentiate that system from all other systems. Systems analysts describe this phenomenon as the whole (system) being greater than the sum of the parts (elements).

For example, one system we all come in contact with each day is water. If asked to list the attributes of water, most people will include "wetness" somewhere on their list. It is the unique

interaction of the elements hydrogen and oxygen that produces the attribute "wetness." However, further investigation reveals that neither hydrogen nor oxygen alone exhibits the quality "wetness." For this reason, it is crucial for the evaluator to develop an assessment process that examines both the interactions of the individual elements and the system as a whole.

Each community is a system that exhibits its own unique character. Although Coos Bay and Newport, for example, are both small communities on the Oregon Coast, each exhibits a unique essence. Newport, for example, benefits economically from its proximity to Portland and enjoys a thriving tourist industry, while Coos Bay, a port town, is struggling economically in the face of the timber slow-down in the Northwest. These economic differences are among the factors affecting the interrelationships of the schools, businesses, civic groups, and other community elements in each town. Problems present in Coos Bay may or may not be present in Newport, and improvement programs appropriate for Newport may or may not be appropriate for Coos Bay.

Each system is part of a "continuum of systemness," wherein each system is an element in the next higher level system, and each element of a system is its own system with subelements at the next lower level. An example is the school system. As a system, it is comprised of students, teachers, and administrators. The school is also an element of the community. To understand the impact of an improvement program designed for the school necessitates understanding the program's effects on each element within the school system and on the school system as a total entity.

The Logic Model

The "logic model" described in the third article of this series (June 1995) provides an effective tool for systematically analyzing the separate activities of an improvement plan within the framework of a systemic, communitywide approach for improving local conditions. The logic model assists the analyst in assessing how multiple, often hierarchical activities relate to each other, how they relate as a whole to the surrounding community conditions, and whether they are likely to bring about systemic change within the community. The chart on page 20 is a suggested prototype for a community action plan systemic logic model.

One of the initial steps in developing a systemic evaluation process is assessing whether and to what degree program objectives are systemic. The second article in this series (December 1994) suggests that program objectives are systemic if they are:

- **Sustainable:** Held to be important by the community without special funding
- **Potent:** Understood, valued, and embraced by a broad range of community stakeholders
- **Infusive:** Built upon the community's existing mission, resources, and infrastructure
- **Pervasive:** Multifaceted and inclusive in their desired outcomes
- **Coherent:** Create and encourage congruence among all levels of the system continuum

Focus groups, surveys, and personal interviews of key community leaders are commonly used methods for ascertaining the extent to which goals meet these five systemic criteria. The evaluator's major goal through this process is assessing the extent to which program outcomes are consistent with the overall long-term expectations and desires of the community. The closer the fit between community desires and program outcomes, the more likely it is that the program will achieve its goals.

Other Influences

Besides meeting the above criteria, an effective evaluation process must further assist the analyst in differentiating between the effects of three types of influences on local conditions: random influences, external influences, and program influences.

Random influences: Random influences can momentarily affect local conditions, but in fact do not have a systemic or long-term influence on those conditions. An example might be the temporary effect of unseasonably hot weather on alcohol consumption.

External influences: External influences that are outside the community's control also affect local conditions. An example of such a factor is the influence of the state economy upon alcohol

consumption. Ruhum (1995) found in a study of alcohol consumption patterns between 1975 and 1988 that as the economy expands, alcohol consumption increases and visa versa. A $1,000 increase in state per capita income increased expected liquor consumption by 1.2 percent, and a $1,000 decrease in state per capita income decreased expected consumption by 1.5 percent. A 1 percent increase in the employment rate increased the expected consumption of liquor by 1 percent. To accurately monitor the impact of specific alcohol consumption improvement programs on local conditions, a systemic evaluation process must be sensitive to the influences of these factors that are extraneous to the system described by the logic model.

Program Influences: If we consider our community improvement program as a system to influence the community, then our evaluation must be sensitive to the life cycle of the program to accurately assess its impact. Every program evolves through five stages of community influence during its lifetime: introduction, moderate influence, rapid influence, saturation influence, and declining influence.

When a new program is introduced into the community (introduction stage) it has very little influence beyond the initial program planners. Few community people know of or have participated in the program. The program planners will need to spend time and other resources to promote the program and involve community stakeholders in the program.

As members of the community begin to learn about and participate in the program, its impact grows beyond the initial planners (moderate influence stage). During this stage, the planners are still working diligently to promote the program and increase participation across the community. As more and more people become involved in the program, the impact of the program enters the rapid influence stage when the momentum of activities and community involvement increases its influence upon the community.

During the rapid influence stage, planners spend less time on promoting the merits of the program and more time maintaining momentum and providing opportunities for participation. Eventually, a program will reach the saturation influence stage in which few potential new participants remain.

It is during the saturation influence stage that evaluators should conduct a summative assessment of the program's impact. The evaluation should determine whether the program brought about change that is systemic and therefore sustainable or change that is peripheral and therefore fleeting. If a program has not brought about systemic change in local conditions by the time it has reached this stage, it is likely to enter the declining influence stage. At this point, the program's costs outweigh its benefits. When this occurs, planners may want to consider replacing or modifying the program, once again propelling it into an introductory stage.

If we are to utilize evaluation reports for measuring systemic movements, then it is difficult to manage goals that are not clearly understood by and acceptable to everyone. The question is, do we simply "fix the parts" or do we cast our net more widely to encompass the system as a whole? Margaret Jorgensen (1993) indicates that to support systemic reform, we need to assess the performance of complex, holistic tasks and not simply snippets of these performances. How, then, does one implement systemic evaluation with goals that are sustainable, potent, infusive, pervasive, and coherent?

Developing a Process

One of the first steps in developing a systemic evaluation process is to list some of the key elements or characteristics of your organization or community. What makes your organization or community special? How is it unique? Who are the individuals involved and how do they interrelate? In answering these questions, we need to evaluate all aspects of the systemic movement, develop an assessment instrument that measures the previous goals, and provide an analysis that is coherent and addresses accountability in meeting intended goals.

A second step is to list the major goals and core values of your organization. What is your organization trying to accomplish? What are your organization's basic underlying or core values? Out of this process should emerge your objectives, strategies, and activities, which should be specific, measurable, and designed to be accomplished in a definite time frame. There should be a

logical relationship between activities and the desired long-term systemic changes. If you want to influence community behavior through social bonding of individuals, for example, your program activities should logically encourage social bonding.

A third step is to invite community comment regarding the congruence of your goals, objectives, strategies, and activities through focus groups, surveys, and/or interviews. The results of your study may suggest the adoption of other strategies to influence community behavior or norms.

A fourth step is to develop an evaluation that will assist in analyzing the degree of influence the program has had on community behavior and norms. This model should allow for analysis of both short-term, intermediate outcomes and long-term, systemic outcomes. The intermediate outcomes relate to the success of implementing various activities, while long-term outcomes relate to community impact.

Analysis and Reporting

When preparing an analysis, the evaluator must possess two very important attributes: knowledge about and understanding of the system being evaluated, and a caring attitude about the results.

Because the influences on changes in community behavior and norms are complex, the evaluator must avoid assuming a causal relationship between community program interventions and benchmark statistics. For example, it is possible that community intervention is having a systemic impact, while at the same time other influences are causing benchmarks to move in opposition to the desired direction (for example, the use of drugs may go up even though the intervention is having a positive impact on members of the community). Because systems have many variables that are not controlled, any one of them might have a causal effect on the desired change.

When the best research findings and the best evaluation models are used to design and assess a community improvement program, we can logically conclude that our interventions have had some causal effect on the system at some level. With this in mind, evaluators may want to be involved in the planning stages, assisting community planners to develop a comprehensive and focused interrelated set of interventions grounded in research and linked to desired outcomes. This would deter communities from assuming that one activity, such as a "red-ribbon" parade, will change community behavior or norms. The logic model then becomes a strategic tool for accomplishing this task. If interventions are based upon what research says works in changing behavior and norms, we can assume that these activities will have a systemic influence on the community.

The analysis also can assess the effectiveness of your program in achieving intermediate goals. An intermediate goal for a school, for example, might be to establish 25 mentoring partnerships—just one of a comprehensive set of interventions designed ultimately to reduce tobacco, alcohol, and other drug use among youth. If the mentorships were in fact established, we could say the school had achieved an intermediate goal, and we could also say that these intermediate outcomes are influencing our long-term systemic goals. We would incorporate this process for all of the activities or interventions we adopted.

The important point is that we can make a logical connection between intervention and impact, while we couldn't make that same connection between intervention and some specific benchmark. If we adopted this process we could also use our yearly results as a planning tool. We could assess whether the program had a systemic impact on the lives of those individuals directly involved in the intervention (that is, we could test whether it works or not). We could assess whether our goal of so many mentorships was attainable (that is, whether we need to devote more or fewer resources). Ultimately, we could assess whether a given intervention should be eliminated or others should be adopted to strengthen our program.

If additional planning or program modification is needed, then a face-to-face meeting between systems management and systems users to discuss findings is imperative. Discussions involving recommendations for continuation, modification, or rejection of various program components are

best conducted in person. Such discussions would focus on whether efforts were sustainable, potent, infusive, pervasive, and coherent.

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COMMUNITY SYSTEMIC PLAN

Community Benchmarks	Conditions	Activities	Outcomes	Impact
1. Pregnancy rate per 1,000 females ages 10-17. 2. Percentage of children kindergarten teachers believe are prepared to participate successfully in school. 3. Percentage of drug-free babies. 4. Percentage of drug-free teens. 5. Percentage of safe child care facilities meeting basic standards. 6. Percentage of high school students enrolled in vocational/educational programs. 7. Overall crime rate. 8. Percentage of work force with strong adaptability skills.	1. Low citizen trust of government effecting their involvement and commitment. 2. Inadequacy of the delivery of needed family services. 3. Lack of citizen involvement in solving local community issues. 4. Lack of support community and government support to gain a sense of health and family wellness.	1. Establishing Community Human Services Teams: A. Skill-building and tool development. B. Discussing problems and issues. 2. Developing clear and shared vision of health and wellness for families and community. 3. Identifying and involving stakeholders and key partners. 4. Engaging stakeholders in finding solutions to problems. 5. Facilitating alignment between public and private agencies and service providers 6. Linking of community and county together in a systemic alliance.	1. Establishment and strengthening of community progress teams who possess new problem solving skills and tools. 2. Clear and shared vision of family and community health. 3. Communitywide commitment and participation in strategy development and implementation.	1. Develop healthy families, children, and other community groups. 2. Develop a community and team shared vision of coordinated services that encourage healthy families, children, and community groups.

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Article 6, September 1995

Using Evaluation Findings in Improvement Efforts

By CHANGHUA WANG
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Before we get into the discussion on the use of evaluation information to strengthen strategies for systemic improvement, it will be helpful to review the concepts of "systemic improvement" and "systemic goals." As explained in the first article of this series, the improvement is systemic when it:

- Is accepted within the components of the existing system
- Spreads through the entire system
- Has power to make visible, desired differences, both in terms of process and outcomes
- Strengthens linkages among components of the existing system
- Becomes part of and improves the culture of the system

Following the same line of thinking, Steve Nelson in the second article of this series proposed a five-point test for a systemic goal. He stated that the goals of a program are more likely to be systemic if they are:

Sustainable. Would the organization continue to hold this goal in the absence of special funding or programs?

Potent. Is this goal understood, valued, and embraced by a broad range of stakeholders in the community?

Infusive. Does this goal build upon the existing mission, resources, and infrastructure of the organization?

Pervasive. Is the goal multifaceted and inclusive in its desired outcomes?

Coherent. Does the goal create and encourage congruence among the levels and dimensions of our system?

A systemic evaluation as presented in previous articles should be designed to provide information in all of the above areas. Three key concepts—system, linkages, and stakeholders—can be discerned from the five criteria for systemic improvement and the five points for systemic goals. Expanding on these key concepts, then, we find that information gleaned through a systemic evaluation can strengthen strategies for systemic improvement by:

- Defining and illuminating the system for improvement
- Strengthening linkages among components of the existing system
- Involving major stakeholders within the system

Defining the System

Nonsystemic evaluation tends to focus on isolated outcomes such as test scores without looking into the intricacies of relationships within the system. The results of nonsystemic evaluation often do not reflect what is really happening and are of little use for program improvement. For example, the Title I/Chapter 1 evaluation process was very *systematic*, almost to the point of being mechanical, but it was not *systemic*. Norm-referenced test scores were used to measure student achievement at the school, district, state, and national levels. The process was designed to produce a common measure on student achievement to be reported to Congress, not to provide information that would help program staff understand the relationships between program implementation and student outcomes. Consequently, the results of Title I have been of little use

for program improvement at the local level. Although Congress has encouraged local programs to do more than what was required for evaluation, limited resources and misunderstanding of evaluation have meant that Title I administrators rarely have gone beyond compliance.

Nonsystemic evaluation provides us with fragmented information and divides a whole experience into separate, isolated parts. In contrast, systemic evaluation starts with a careful study of the major relationships within the system. Great efforts are made to determine causal relationships that lead to certain outcomes. The goal of the evaluation is to find out how a program can manipulate certain variables (use various interrelated strategies) within the system to achieve desired outcomes. Information collected through systemic evaluation will be used to check whether goals set for a program are systemic by using the five-point test mentioned above.

Before a program can set out to achieve its desired outcome, the system or context in which the program is operating needs to be defined. In the third article in this series, Dean Arrasmith describes the "logic model," whose first component is defining the context or the condition of the system. The other components of the model are: the interventions or activities to be conducted, the expected outcomes related to the interventions, and the impact of intervention on the system. The logic model is often described as a series of steps in a sequential order where one step builds on another.

At the beginning of a program, the issues and problems that the program is supposed to address are defined, usually through a needs assessment or interviews with key stakeholders. For example, in the case of community drug prevention, these issues and problems may include, but are not limited to, child abuse, births to teens, alcohol outlets, drug-affected births, public housing needs, suicide attempts, and juvenile crime rate. These problems and issues clearly indicate the scope of the program and relative parameters of the system in which these issues and problems are dealt with.

The evaluation can provide further information regarding existent resources available within the system. Based on this information, the program can identify strategies for interventions or activities for drug prevention within the community and define expected outcomes and impact of these strategies on the program. A systemic evaluation should be an integral part of a program designed for systemic improvement. Evaluation is not the end but a mechanism to monitor and stimulate change.

Involving Stakeholders

When the system is defined and key issues and problems are identified, the next question for the evaluation is: Who are the stakeholders of the program? Or, phrasing the question differently, who is going to use evaluation information and who can make a difference in the system? Research on knowledge utilization suggests that the successful application of knowledge requires two simultaneous conditions. First, the information must have a visible bearing on a perceived problem. Second, there must be a continuous and consistent dialogue between those who gather and provide information and those who must use it.

The first condition requires consensus on the questions to be asked in the evaluation. To ask the right questions is almost a prerequisite for any use of evaluation information. Evaluators need to understand the system and their collaboration with key players within that system to reach an agreement on what is important to ask in the evaluation. This is often recorded in the evaluation design.

The second condition suggests that stakeholders need to be involved throughout the evaluation. It is not uncommon to find presence of all stakeholders at the initial stage of the evaluation, but as the evaluation progresses, the program director is perhaps the only person who still knows the status of the evaluation. Therefore, it is important to keep all stakeholders informed of the progress of the evaluation and obtain their feedback on all major issues relating to the evaluation from beginning to end. In this sense, a systemic evaluation is a continuous and consistent dialogue between stakeholders and evaluators. Stakeholders need to be involved in interpreting the evaluation data that are provided by evaluators. When this occurs, the evaluation information is

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more likely to be used effectively to monitor or verify whether target groups have been served as the program intended.

In some cases, the source of funding for the evaluation may be an indication of who cares about the evaluation results. For some federally funded evaluation projects, evaluation questions often are already defined by the funding agency and are not particularly tailored for local interest. Asking a local agency or agencies to match certain evaluation funds and include evaluation questions of local interest may be an important step to obtaining active participation of local stakeholders and shared ownership of the evaluation results.

Strengthening Linkages

One of the criteria for systemic improvement is that it is likely to strengthen the linkages among components of the existing system. The logic model can be used as a tool to monitor such linkages. The beauty of the logic model is the simplicity of the sequence of steps as described in Article 3 as "rational, empirical, and intuitive."

However, this model could also be misleading. The connection of the four basic components of the model could be misconceived as simple and sequential: one component leading to another. Systemic evaluation, however, involves multiple levels of relationship that may not be sequential as described in the logic model. Therefore this model has to be used with caution.

Within a system where relationships between different components are "fluid and dynamic," there is no simple one-to-one causal relationship. One single outcome may result from multiple factors existing in the system. Systemic evaluation seeks to trace and explain such complex relationships by using multiple variables and qualitative study of the context surrounding such relationships. Systemic evaluation may not be able to pin down one or two solutions to certain problems. But evaluation information obtained through a systemic evaluation may help reduce the uncertainty of decisionmakers in seeking solutions to problems, while fostering more meaningful relationships between and among various components within the system.

Systemic evaluation should be viewed as an integral part of a program. It is a built-in mechanism for seeking the information that will help strengthen strategies for systemic improvement. Because of its complexity, systemic evaluation may require redefining the roles of an evaluator. In addition to being an external, objective observer, the evaluator might also be a participant in a program. The appropriate relationship between evaluators and their clients may not be as distinct as traditionally defined.

For more information on systemic evaluation for prevention programs, contact Jerry Adams at (503) 275-9484.